1. In the below elements which of them are values or an expression? eg:- values can be integer or string and expressions will be mathematical operators.

\*

'hello'

-87.8

-

/

6

**Solution:** expression, value, value, expression, expression, expression, value

2. What is the difference between string and variable?

**Solution:** String is a type of value and variable is a temporary address which stores the particular type value in it.

3. Describe three different data types.

**Solution:** there are many data types in Python but three data types are mentioned below:

**Integer:** Integer is a data type which represent numerical values without decimal points and complex numbers. If ‘a’ is a variable and it store the value 10 in it then ‘a’ is integer data type variable which has stored a numerical value.

**String:** anything which is enclosed either in a single comma ‘,’ or double “,” or triple comma ‘”,’” is called string value. If ‘a’ is a variable and it store the value “rahul” in it then ‘a’ is a string data type variable which has stored a string value.

**Float:** numerical values with decimal point is called float values and if a variable store the float values then it called float data type variable. for instance if a = 10.75 then a has float value 10.75 in it so a is float data type variable.

4. What is an expression made up of? What do all expressions do?

**Solution:** Expression is made up of mathematical operators and operands. It’s a mixture of variable, values and operators. It is a representation of value. Suppose a,b,c, are variable and formed the equation like a= b+c+100 so a,b,c, +, = are expression which represent the values.

5. This assignment statements, like spam = 10. What is the difference between an expression and a statement?

**Solution:** difference between Expression and Statement

1. Expression is a representation of value and statement is a executable line of code. In a above example = represent that 10 is stored in a variable spam. And spam = 10 in whole is a executable line of code which is a statement.
2. Expression is a part of statement but statement can contains many expressions in it.

6. After running the following code, what does the variable bacon contain?

bacon = 22

bacon + 1

**Solution:** 22

7. What should the values of the following two terms be?

'spam' + 'spamspam'

'spam' \* 3

**Solution:** Both will show value : ‘spamspamspam’

8. Why is eggs a valid variable name while 100 is invalid?

**Solution:** eggs is a valid variable because it starts with alphabetic character but 100 is invalid because as per the naming variable rules in python language that a first character of a variable must be either start with alphabetic character or \_. It must not begin with numerical or a special character except \_. It must not also a keyword.

9. What three functions can be used to get the integer, floating-point number, or string version of a value?

**Solution:** int(), float() and str() functions can be used to get the integer, floating-point number, or string version of a value. To get integer value we can use int() function. To get float value we can use float() function. To get string value we can use str() function.

10. Why does this expression cause an error? How can you fix it?

'I have eaten ' + 99 + ' burritos.'

**Solution:** while executing **'I have eaten ' + 99 + ' burritos.'** In a python interpreter we get type error because we are trying to concatenating the two different types of data values of string and integer. We can concatenate or add same type of data values. To correct this we have to convert 99 into a string value. Correct code will be

'I have eaten ' + str(99) + ' burritos.'